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ABSTRACT

This report presents an analysis and synthesis of student performance data collected through state-mandated testing programs. The common performance areas assessed were basic skills achievement. The unique performance areas assessed were content skills within a particular state. Achievement data from the National Assessment of Educational Progress (NAEP) were analyzed for a perspective on performance of students within Pennsylvania, New Jersey, and Delaware relative to national norms. Several conclusions were drawn: long term achievement trends are generally positive; programs are needed to improve upper level school performance; there is a decrease in positive long term trends as a student moves from the elementary to secondary level; higher order cognitive skills need to be emphasized as well as minimum basic skills; and improvement efforts need to be expanded by schools to maximize student performance in cognitive and affective achievement at all grade levels. (DWH)

INTRODUCTION

The needs assessment function at RBS is an integral part of the laboratory's overall planning and development process. Needs assessment activities are intended to facilitate review of the regional responsiveness of current laboratory programs, possible redirection of programs or establishment of new programs, and feedback to the National Institute of Education, as well as state departments of education, regarding empirically derived needs. One of the major needs assessment activities is the examination of student performance data related to designated learning goals for each of the states in the RBS region (PA, NJ, and DE).

Each SEA in the RBS region has a mandated testing program to assess student performance, particularly in the basic skills areas. These testing programs are: in Pennsylvania, the Educational Quality Assessment (EQA) Program; in New Jersey, the Minimum Basic Skills (MBS) Program; and in Delaware, the Delaware Educational Assessment Program (DEAP). Table 1 presents an overview of the current testing programs for each of the three states.

While the states have implemented some type of testing program for many years, substantial revisions were made and/or testing programs were standardized in each of the three states during the 1977-1978 school year. Although the overall goal of each state program aims at the assessment of performance related to designated learning objectives, the programs vary widely with regard to basic content and analytic approach. The respective programs compare student performance with either statewide norms (EQA), national norms (DEAP), or state-established success criteria (MBS). In Delaware, a commercial standardized test series (the California Achievement

Table 1

Overview of State Testing Programs

State	Testing Program	General Context	Grades Tested	Statewide Norming Score Types	Testing Sample	Primary Unit of Analysis/Reporting
PA	Educational Quality Assessment (EQA)	State-developed test with 14 subtests: reading, math, self-esteem, understanding others, writing, interest in school, societal responsibility, knowledge of law/govt., health, creativity, career awareness, appreciating human accomplishments, knowledge of human accomplishments, information usage	5, 8, 11	raw scores	voluntary, required every 5 years (different sample each year)	school level
NJ	Minimum Basic Skills (MBS)	State-developed test with reading and math subtests; testing program in transition, with new tests currently in development stage	9, 10* (in 1983)	MBS scores (equated to 1978 test sample)	all districts, each year	district level
DE	Delaware Educational Assessment Program (DEAP)	California Achievement Test (CAT) with 10 overall subtests in 4 major areas: reading, mathematics, spelling, language	1-8, 11	Normal Curve Equivalents (NCE), referenced to national norms	all districts, each year	state, district, and school levels

*From 1978 to 1982, the MBS test was administered to students in grades 3, 6, 9, and 11. In 1983, the test was administered only to 9th and 10th grade students since New Jersey is shifting from a minimum competency test to a wider ranging graduation proficiency test.

Tests) is used, while the other two states use locally developed instrument packages. The EQA includes 14 subtests addressing several different types of outcomes, whereas the MBS focuses primarily on two areas of basic skills learning (although a writing assessment will be added). Each state administers tests to different grades. The New Jersey testing program is currently in transition, as it moves from an emphasis on minimum basic skills to a wider ranging graduation proficiency assessment. In 1983, only ninth and tenth grade students took the MBS test. The tenth graders were those who did not pass the test in 1982 who needed to retake it to meet state graduation requirements.

Delaware and New Jersey samples are relatively consistent from year to year, while Pennsylvania samples differ since participation in the test is voluntary to some extent. Each state reports norms in terms of different scoring procedures. In addition, the primary unit for reporting test results differs between states. For EQA, individual schools are intended as the primary units of analysis whereas districts are intended as the primary units for the MBS test. In Delaware, results are analyzed and reported at multiple levels.

This report on trends in school improvement test results presents an analysis and synthesis of student performance data collected through state-mandated testing programs. Subsequent sections of the report describe the analysis approach, discuss performance results, and summarize conclusions based on the analysis.

ANALYSIS APPROACH

The RBS assessment of student performance in the tri-state region consisted of a secondary analysis of existing data available from the three statewide testing programs. The analyses had two major components:

- assessment of common performance areas
- assessment of unique performance areas.

The analysis of common performance areas focused on assessment of student basic skills achievement (i.e., reading and math). The analysis of unique performance areas addressed content skills assessed only within a particular state (e.g., self-esteem in Pennsylvania).

Performance data were analyzed at three levels of schooling:

- elementary
- intermediate
- secondary.

Since grades tested were somewhat different across states, results from grades 5, 8, and 11 were used to assess the three respective levels for Pennsylvania and Delaware. Results from grades 6, 9, and 11 were available for New Jersey for 1978 through 1982. For 1983, only intermediate level data (i.e., grade 9) were used for trend analysis.

A major focus of the analysis was upon year-to-year trends in student performance. This year's (1983) test results were examined in light of results of prior years to determine if performance was stable, improving, or declining. Baseline data from the 1977-1978 school year, as well as from several subsequent years, were available from all states.

Although the analysis of trends within a state is relatively straightforward, the synthesis of results across states was difficult due to the

major differences between test content, norms, and types of scores. The analysis of trends across states required the conversion of existing test scores (i.e., raw score means) to a common testing metric. For this purpose, baseline scores (i.e., 1978 mean scores) were arbitrarily set as standard scores of 50 and converted standard score means for subsequent years were compared to the baseline distributions. All scores were converted to standard scores based on a mean of 50 and a standard deviation of 21.06. This resulted in an equal interval scale with a hypothetical range from 1 to 99. Trends on different tests could therefore be analyzed in a gross sense across states, recognizing that student populations and specific test content differed.

In addition, achievement data from the National Assessment of Educational Progress (NAEP) were analyzed to provide a perspective on the performance of students within the RBS region relative to national norms. Reading assessment results are available for 1970, 1975, and 1980; mathematics assessments were conducted in 1973, 1978, and 1982. Results were reported at national and regional levels, but not at state levels.

While it is useful and appropriate to compare trends in statewide test results across states, individual point scores and the magnitude of such scores are not directly comparable for several reasons. There are several limitations in the approach used to analyze results across states. Even though a common score metric was derived, no direct comparison between state achievement levels at individual points can be made because each test differs with regard to content, difficulty level, norming samples, and other psychometric properties. The fact that two states may have equal standard scores does not imply that the relative level of student performance is

equal. Likewise, the derived standard scores should not be regarded as normal curve equivalents (NCEs) based on national norms. A standard score of 50 in the reported analyses does not mean that achievement is at the national average; indeed, it may be significantly above or below the national average. All reported standard scores are based solely on the distribution of scores for students tested in each respective state. The purpose of the conversion of scores to a standard score metric is to enable meaningful indications of gross trends only.

Another consideration in the analysis relates to the comparability of student samples from year to year. In Pennsylvania, since participation in the program from year to year is somewhat voluntary (i.e., districts are required to participate only once every five years), the sample of districts changes from year to year. For example, PDE officials reported that a disproportionately high number of vocational students were tested in 1982. To some extent, PDE controls for annual variations by choosing a norming sample based on school district size and wealth. In New Jersey, since only certain grades are tested each year, the grade level populations may change from year to year. In addition, even though all districts in New Jersey and Delaware are tested each year, student populations participating in the testing program may differ from year to year due to such factors as mobility or changing group composition. Group composition may change as a result of student classifications in special education or English as a Second Language (ESL), since such students are exempted from testing. The actual extent to which statewide samples change from year to year is not known. The assumption in the analysis is that changes are not systematic and that samples are

essentially comparable. However, sampling variations limit the accuracy of the year-to-year trend analyses.

Due to the various design limitations, the findings should be viewed cautiously. Annual statewide performance data are "results" in the sense that they "resulted." There may be several plausible explanations for year-to-year changes, including instructional changes and changes in student characteristics. The trend data should be considered as a gross indication of generic student performance.

The RBS analysis of student performance data consisted of two components--an analysis of common performance areas and an analysis of unique performance areas. Each analysis component is presented separately below.

ASSESSMENT OF COMMON PERFORMANCE AREAS

All state testing programs addressed student performance in reading and mathematics. Results for each grade level, by state, are presented in Tables 2 and 3. These do not include scores for ESL or special education students. Converted standard scores are reported for each of the last four school years as well as for the baseline year (1978). Actual raw score means are presented in the Appendix. Changes over the last two school years and the entire period are also reported. As indicated in discussions of study limitations, results should be cautiously interpreted. Scores displayed in Tables 2 and 3 are graphically presented in Figures 1 and 2 to illustrate performance trends.

At the elementary grade level, all states exhibited improvement trends in reading over the five year period. Scores in Pennsylvania declined slightly from 1982-1983, however. Results of the intermediate grade level were stable in Pennsylvania, while improvement trends continued in New Jersey and Delaware. At the secondary school level, trends were relatively stable over the entire period in all states. This represented a discontinuation of the previous downward trend for Pennsylvania secondary school students. Pennsylvania findings tend to fluctuate from year to year, unlike the other states, probably due to variable sampling of schools. Still, the substantial increase at the secondary level last year is encouraging. In general, trends were fairly consistent across states, despite the use of substantially different measures. Overall reading trends clearly indicate that results are strongest at the elementary level and weakest at the secondary level. The findings suggest a slight improvement trend in reading across the three states.

Table 2

Statewide Student Achievement Trends: Reading*

Grade Level / State	School Year (end of year) 1978	1980	1981	1982	1983	Change +/- 81-82	+/- 82-83	+/- 78-83**
Elementary Level								
Pennsylvania	50	54	52	57	55	+5	-2	+5
New Jersey	50	55	61	66	-	+5	-	+16
Delaware	50	55	56	57	58	+1	+1	+8
Intermediate Level								
Pennsylvania	50	51	47	51	51	+4	0	+1
New Jersey	50	51	54	57	59	+3	+2	+9
Delaware	50	52	55	58	60	+3	+2	+10
Secondary Level								
Pennsylvania	50	52	48	46	50	-2	+4	0
New Jersey	50	48	51	52	-	+1	-	+2
Delaware	50	52	53	53	54	0	+1	+4

*Performance is reported in terms of standard scores based on each state's normative distribution. Scores for 1978 are arbitrarily set equal to 50. Scores do NOT represent NCEs based on national norms and specific score points across states CANNOT be directly compared for reasons discussed in the narrative. Results indicate general trends from the 1977-78 through 1982-83 school years.

**For New Jersey, overall gains for the elementary and secondary levels are for the period 1978-82; for the intermediate grade level, the overall gain represents 1978-1983.

Table 3

Statewide Student Achievement Trends: Mathematics*

Grade Level / State	School Year (end of year) 1978	1980	1981	1982	1983	Change +/- 81-82	+/- 82-83	+/- 78-83**
Elementary Level								
Pennsylvania	50	57	53	56	57	+3	+1	+7
New Jersey	50	60	64	67	-	+3	-	+17
Delaware	50	56	59	61	62	+2	+1	+12
Intermediate Level								
Pennsylvania	50	52	48	51	51	+3	0	+1
New Jersey	50	54	57	60	61	+3	+1	+11
Delaware	50	56	59	60	61	+1	+1	+11
Secondary Level								
Pennsylvania	50	49	45	44	46	-1	+2	-4
New Jersey	50	52	54	56	-	+2	-	+6
Delaware	50	54	55	55	56	0	+1	+6

*Performance is reported in terms of standard scores based on each state's normative distribution. Scores for 1978 are arbitrarily set equal to 50. Scores do NOT represent NCEs based on national norms and specific score points across states CANNOT be directly compared for reasons discussed in the narrative. Results indicate general trends from the 1977-78 through 1982-83 school years.

**For New Jersey, overall gains for the elementary and secondary levels are for the period 1978-82; for the intermediate grade level, the overall gain represents 1978-1983.

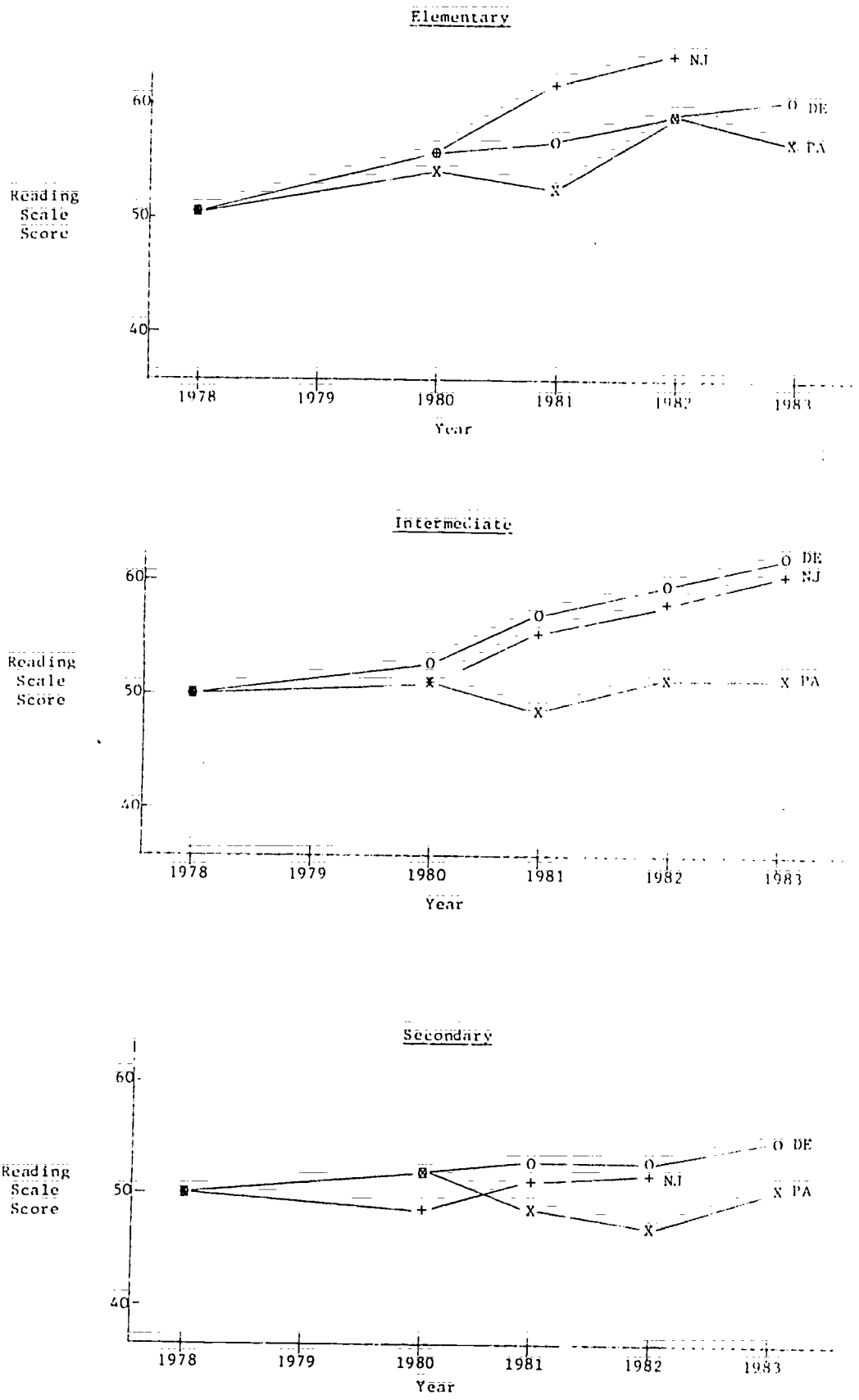

Figure 1. Student performance trends in reading achievement, by grade level, for Pennsylvania ("X"), New Jersey ("+"), and Delaware ("O").

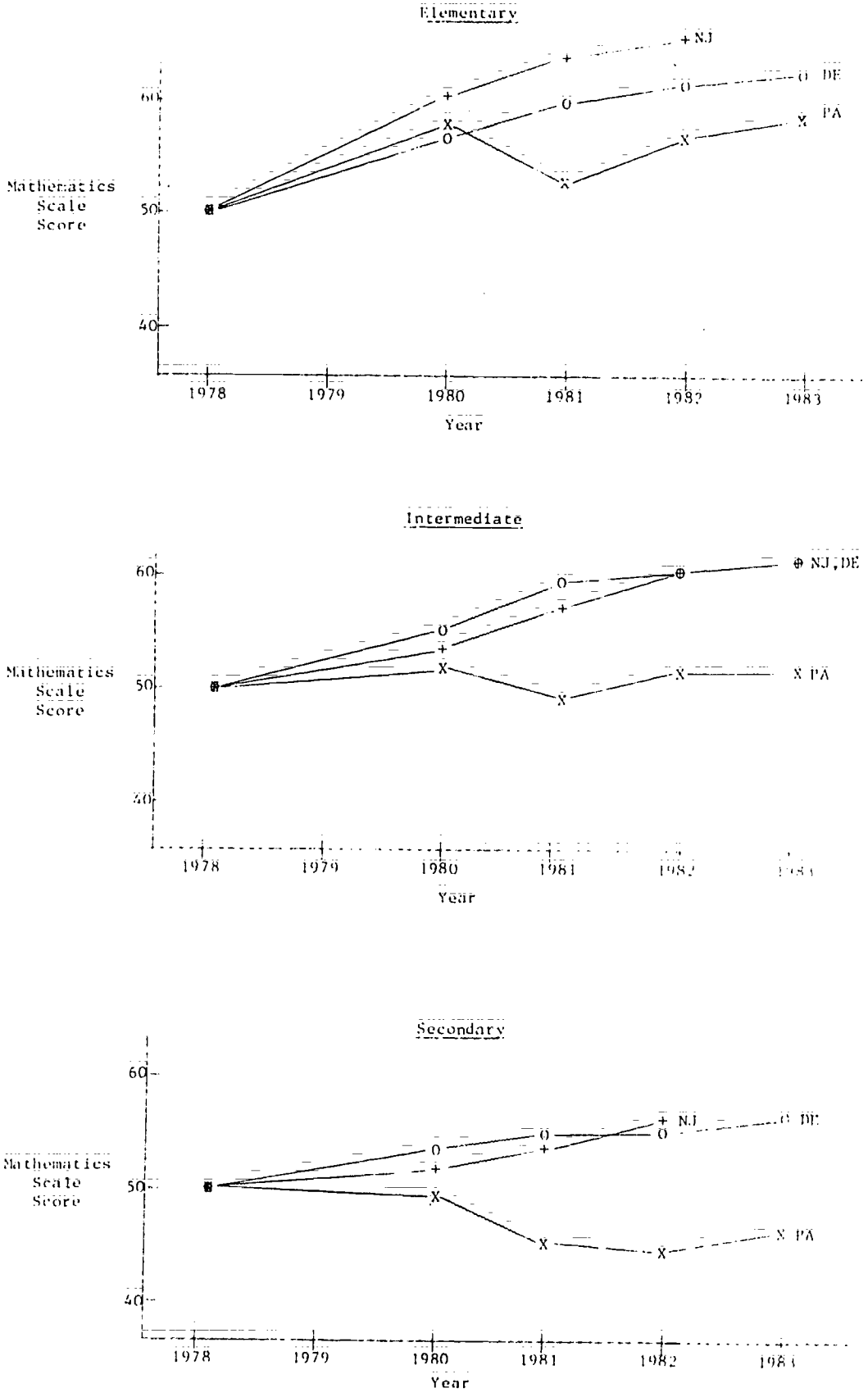

Figure 2. Student performance in mathematics achievement, by grade level, for Pennsylvania ("X"), New Jersey ("+"), and Delaware ("O").

Results for the 1975-1980 comparisons in the National Assessment of Educational Progress[1] indicate significant improvement in reading comprehension of nine-year olds in the national sample and in the subsample for the Northeast region. Results for the 13-year old group show no significant change, while results for the 17-year old group indicate a slight, although nonsignificant, decline in reading achievement. The rate of decline for the Northeastern region subsample of seventeen year olds is slightly greater than for the overall national sample. Results of the statewide testing programs show trends fairly similar to NAEP results through 1980. After that point, it appears that trends at the elementary schools continue to improve while results at the intermediate and secondary levels remain relatively stable. The overall stability of scores at the secondary level suggest that declines may not be as severe as exhibited in the NAEP testing and may be in the process of changing in Pennsylvania, New Jersey, and Delaware.

Overall mathematics trends were fairly similar to those exhibited in reading. Over the five year period, student scores at the elementary and intermediate grade levels in Delaware and New Jersey increased substantially while Pennsylvania results were stable. Most improvement occurred during the 1978-1980 time period. Results at the secondary level were fairly stable for all states throughout the five year period. Similar to reading results, the steady, slight decline found in Pennsylvania at the secondary level from 1978-1982 was discontinued during 1982-1983. Even though student

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[1] National Assessment of Educational Progress. Three national assessments of reading: changes in performance, 1970-1980. Denver, Colorado: Education Commission of the States, 1981.

performance is not quite equal to the 1978 level, last year's improvements are encouraging. Again, trends were most positive at the elementary grade level and least positive at the secondary grade level.

Mathematics results for the NAEP were reported for the period from 1973 through 1982.[2] Results at various age levels are somewhat different than those for reading. Differences may reflect changes in student population and/or actual achievement from 1980 to 1982. Findings for the nine-year old group were stable across all three assessments (1973, 1978, and 1982). For 13-year olds, mathematics achievement declined during the initial period, but significantly increased from 1978 through 1982. Results for the 17-year old group declined from 1973 to 1978 but leveled off during the latter period. Authors of the report suggested that the test instruments were more sensitive to recent changes in curriculum and instruction at the intermediate grade level than for other grade levels. In addition, they added a cautionary note indicating that, although secondary school students do well on relatively easy tasks (e.g., routine computation), results for higher order tasks were not as impressive. This finding has often been noted by the recent educational literature as a result of concentrating on "minimum competencies" at the expense of higher order skills. In general, NAEP findings for intermediate and secondary grades are similar to results of the three state-wide testing programs. State mathematics trends at the elementary level are more positive than that suggested by the NAEP.

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[2] National Assessment of Educational Progress. The third mathematics assessment: results, trends, and issues (1981-82 assessment). Denver, Colorado: Education Commission of the States, 1983.

Although student achievement in Pennsylvania and New Jersey cannot be compared to national norms, CAT results for Delaware were available in NCE scores based on the national standardization sample. These results are presented in the Appendix. Overall, results indicate that Delaware students score considerably higher than the national average in both reading and mathematics, particularly at the elementary grades. Likewise, these results clearly illustrate that high achievement at the lower grades substantially tapers off by the high school level. Reading results from the NAEP assessment are similar to these findings. Scores for students in the Northeast region at all age levels are higher than the national average, particularly for the nine-year old group. Scores are not much higher than the national average for the older groups of students.

ASSESSMENT OF UNIQUE PERFORMANCE AREAS

The EQA and DEAP testing programs include components in addition to tests in basic skills. Results are described below for each state. The New Jersey assessment program does not address other than basic skills learning objectives and is therefore not included in this section.

Pennsylvania

Results in other areas addressed by the EQA are presented in Table 4. Average scores are reported as standard scores referenced to mean scores in 1978. The data indicate general trends by grade level, for each of the learning goals. However, it must be recognized, again, that specific point scores are not directly comparable across grade levels due to differences in the psychometric properties of the tests (e.g., test difficulty). Grade level differences are only valid in the sense of general trends from year to year. Actual raw score means are presented in the Appendix.

To some extent, trends are inconsistent, with varying patterns across subtests and grade levels. In some cases, such as societal responsibility, results tend to fluctuate considerably from year to year. These findings may be due to factors such as sampling variation or test unreliability. Achievement on many subtests remained fairly constant from 1978-1983. The following relative strengths and weaknesses in trends over the five year period were observed.

Table 4

Student Achievement in Unique Performance Areas: Pennsylvania

SUBTEST / Grade Level	School Year (end of year) 1978	1980	1981	1982	1983	Change +/- 81-82	+/- 82-83	+/- 78-83
SELF-ESTEEM								
Elementary	50	51	50	51	53	+1	+2	+3
Intermediate	50	50	50	50	56	0	+6	+6
Secondary	50	49	51	55	59	+4	+4	+9
UNDERSTANDING OTHERS								
Elementary	50	55	52	53	54	+1	+1	+4
Intermediate	50	48	45	45	48	0	+3	-2
Secondary	50	47	48	39	43	-9	+4	-7
WRITING								
Elementary	50	54	52	57	58	+5	+1	+8
Intermediate	50	53	49	55	57	+6	+2	+7
Secondary	50	50	47	47	51	0	+4	+1
INTEREST IN SCHOOL								
Elementary	50	50	48	46	48	-2	+2	-2
Intermediate	50	53	54	55	58	+1	+3	+8
Secondary	50	47	53	59	62	+6	+3	+12
SOCIETAL RESPONSIBILITY								
Elementary	50	58	50	54	50	+4	-4	0
Intermediate	50	62	57	60	60	+3	0	+10
Secondary	50	48	45	44	48	-1	+4	-2
KNOWLEDGE LAW/GOVT.								
Elementary	50	53	54	54	55	0	+1	+5
Intermediate	50	49	49	51	51	+2	0	+1
Secondary	50	51	48	47	49	-1	+2	-1
HEALTH								
Elementary	50	57	54	59	58	+5	-1	+8
Intermediate	50	55	46	47	50	+1	+3	0
Secondary	50	52	48	55	55	+7	0	+5
CREATIVITY								
Elementary	50	50	51	46	47	-5	+1	-3
Intermediate	50	43	51	46	46	-5	0	-4
Secondary	50	40	44	40	43	-4	+3	-7
CAREER AWARENESS								
Elementary	50	55	51	56	55	+5	-1	+5
Intermediate	50	52	51	55	55	+4	0	+5
Secondary	50	50	48	48	50	0	+2	0
APPRECIATING HUMAN ACCOMPLISHMENTS								
Elementary	50	54	53	56	50	+3	-6	0
Intermediate	50	50	53	53	52	0	-1	+2
Secondary	50	42	40	41	39	+1	-2	-11
KNOWLEDGE HUMAN ACCOMPLISHMENTS								
Elementary	50	51	47	48	49	+1	+1	-1
Intermediate	50	48	44	52	46	+8	-6	-4
Secondary	50	42	40	41	35	+1	-6	-15
INFORMATION USAGE								
Elementary	50	54	51	55	55	+4	0	+5
Intermediate	50	50	49	51	51	+2	0	+1
Secondary	50	51	50	47	50	-3	+3	0

Level	Strengths*	Weaknesses*
Elementary	• writing • health	• creativity • interest in school
Intermediate	• writing • interest in school • societal responsibility • self esteem	• creativity • knowledge of human accomplishments
Secondary	• self esteem • interest in school	• understanding others • creativity • knowledge of human accomplishments • appreciating human accomplishments

Changes from 1982-1983 varied considerably between levels. At the elementary level, there were substantial declines in societal responsibility and appreciating human accomplishments. Other subtest scores remained stable. At the intermediate level, there were large increases in understanding others, interest in school, and health knowledge. On the other hand, scores for knowledge of human accomplishments dropped significantly. This decline was also evident at the secondary school level. Overall, 1983 results at the secondary level were very encouraging. There were significant increases in self esteem, understanding others, writing, and societal responsibility. Also, there were increases in several other subtests (i.e., interest in school, creativity, and information usage). For many of these secondary school subtests, several years of continuing negative trends were reversed in 1983.

*Note that relative strengths and weaknesses refer to trends since 1978 rather than absolute standards.

Delaware

Results in other areas addressed by the DEAP are presented in Table 5. Again, average scores are reported as standard scores referenced to the baseline results and should not be confused with nationally-normed NCE scores. National NCEs are presented in the Appendix.

Achievement scores of Delaware students at virtually all levels have risen dramatically over the past five years. Results show that, for the most part, trends have been fairly stable since 1980. Slight increases were demonstrated each year, with more substantial increases occurring during the 1978-1980 period. Language results at the elementary school level increased considerably in 1983. Trends seem to be similar for both spelling and language. Positive trends seem to be stronger at the elementary and intermediate levels than they are for the secondary level. In relation to national norms, Delaware students score considerably higher than national averages in spelling and language (see Appendix).

Table 5

Student Achievement in Unique Performance Areas: Delaware

SUBTEST Grade Level	School Year (end of year) 1978	1980	1981	1982	1983	Change +/- 82-83	+/- 78-83
SPELLING							
Elementary	50	57	58	N.A.*	62	-	+12
Intermediate	50	57	59	N.A.	59	-	+9
Secondary	50	53	54	N.A.	55	-	+5
LANGUAGE							
Elementary	50	57	59	60	64	+4	+14
Intermediate	50	55	57	61	62	+1	+12
Secondary	50	53	54	56	58	+2	+8

*Spelling results for 1982 not available.

CONCLUSIONS

A review of results from the three statewide testing programs suggests the following conclusions with respect to both common performance areas (reading and math basic skills) and unique performance areas:

- Long-term trends in basic skills for all three states were most positive at the elementary level, less positive at the intermediate level, and least positive at the secondary level. These findings are generally consistent with NAEP results. However, the slope of state achievement trends at the secondary level suggests that recent declines may not be as severe in the tri-state region as exhibited nationally in the NAEP testing.

- Overall, long-term achievement trends exhibited on New Jersey's MBS test were more positive than those for Pennsylvania and Delaware's testing programs, predominantly due to trends at the elementary level (even though trends for these states were also positive). This finding follows from results of the NAEP which found that students' performance is improving with regard to "minimum competencies." NAEP findings illustrate that today's students perform better on items testing "minimum competencies" than on items tapping "higher order cognitive" skills. Differences in test content may account for these differences between states in demonstrated trends.

- Delaware test results show that student achievement at all grade levels exceeds national norms. Moreover, findings indicate that performance is increasing relative to national norms at rates higher than might be expected given typical achievement gains. However, the results also illustrate that achievement relative to national norms is much stronger at the elementary grades and that positive performance tapers off by the secondary school grades.

- Pennsylvania results suggest that long-term student performance trends in cognitive areas (e.g., reading, mathematics, writing) seem to be more positive than trends in affective areas (e.g., creativity, understanding others, appreciating human accomplishments), although affective results in 1983 were generally higher than the previous year.

- In general, basic skills trends across the states during 1982-1983 were fairly stable. However, results for secondary school students in Pennsylvania discontinued the consistent downward trends of prior years, as scores improved considerably.

The findings suggest that student achievement performance in the tri-state region (Pennsylvania, New Jersey, and Delaware) reflects the results of national studies. Long-term achievement trends are generally positive. In fact, findings in several areas are more positive than those indicated by the national trends. However, the findings also suggest several areas for improvement.

Despite the positive long-term trends overall, there is a decrease in positive long-term trends evidenced as one moves from the elementary to the intermediate and secondary levels. Implications can be drawn from this relative to both the allocation of resources across education levels and the kinds of skills emphasized in the curriculum. In terms of school resources, it suggests that more attention be given by schools to program aimed at improvement of upper level performance. If a movement can be initiated at the secondary level paralleling the emphasis on early childhood and elementary education the nation has experienced over the past decade or more, then perhaps a similar impact on achievement trends can be attained.

A second implication of the decrease in positive long-term trends across grade levels is supported also by the markedly sharp positive slope of the New Jersey trends at the elementary level. The implication concerns the kinds of skills being taught as part of the curriculum at various levels in the schools. In recent years, both educational objectives and tests have gravitated toward the concept of "minimum basic skills." The New Jersey Minimum Basic Skills testing program has been one example of this. The increasing movement to minimum high school graduation standards and tests by several states is another. What the long-term achievement trends seem to be suggesting, however, is that there is more to "effective schooling" than

just the "minimum basic skills." Additional attention clearly needs to be focused on higher order cognitive skills, such as problem solving, reasoning, and critical thinking. For example, New Jersey recently has recognized this problem by initiating a change in the focus of their testing program from a minimum competency test to a wider ranging achievement test as the measure of school and student accountability. Finally, the Pennsylvania findings illustrate the need to focus on affective areas as well as cognitive areas.

In summary, overall long-term statewide achievement trends over the past five years are encouraging. The assessments show that schools can have a demonstrable impact on student performance when concerted efforts are targeted at specific problem areas. The recent literature on effective schools, the NAEP reports, and reports of several national study commissions (e.g., the National Commission on Excellence in Education, the National Task Force on Education for Economic Growth, and the Task Force on Federal Elementary and Secondary Educational Policy) have suggested a number of ways for increasing student achievement. RBS experience with effective schools in the tri-state region indicates that many schools are implementing such R&D findings to improve school practices, particularly at the elementary school level. To a large extent, these improved practices may account for improvements in demonstrated achievement trends in the basic skills. Practitioners need to continue and expand these improvement efforts in order to maximize student performance in all achievement areas (cognitive and affective) at all grade levels.

APPENDIX

APPENDIX

Student Performance Results: Statewide Raw Score Means

STATE Grade Level Subtest	1978	1980	1981	1982	1983
PENNSYLVANIA					
Elementary					
Self-Esteem	62.1	62.3	62.2	62.3	62.6
Understanding Others	119.0	120.8	119.5	120.2	120.3
Reading	27.0	27.8	27.4	28.2	27.9
Writing	28.6	29.2	29.0	29.7	29.8
Mathematics	36.3	37.6	36.8	37.4	37.5
Interest in School	55.4	55.4	55.1	54.9	55.2
Societal Responsibility	42.8	43.7	42.8	43.2	42.8
Know. Law/Govt.	10.8	11.0	11.1	11.1	11.2
Health	28.9	29.8	29.4	30.2	30.0
Creativity	53.5	53.4	53.6	52.4	52.5
Career Awareness	24.4	24.9	24.5	25.1	24.9
App. Human Accomp.	147.7	149.6	149.2	150.7	147.5
Know. Human Accomp.	21.8	21.9	21.3	21.5	21.5
Information Usage	18.5	19.0	18.7	19.1	19.1
Intermediate					
Self-Esteem	58.3	58.3	58.2	58.3	59.0
Understanding Others	112.4	111.8	110.8	111.0	111.9
Reading	26.9	27.1	26.5	27.1	27.1
Writing	36.3	36.8	36.2	37.0	37.3
Mathematics	31.6	32.0	31.3	31.7	31.8
Interest in School	67.6	68.0	68.2	68.6	69.2
Societal Responsibility	59.9	61.7	61.0	61.4	61.4
Know. Law/Govt.	24.9	24.8	24.8	25.1	25.2
Health	87.4	88.3	86.8	87.0	87.4
Creativity	47.1	45.6	47.4	46.3	46.2
Career Awareness	23.0	23.2	23.1	23.5	23.5
App. Human Accomp.	31.0	130.8	132.2	132.3	131.5
Know. Human Accomp.	30.3	30.0	29.6	29.3	29.6
Information Usage	14.9	14.9	14.8	14.9	15.0
Secondary					
Self-Esteem	58.9	58.8	59.1	59.5	59.9
Understanding Others	114.4	113.7	112.9	111.6	112.7
Reading	25.1	25.4	24.9	24.6	25.1
Writing	34.7	34.7	34.4	34.3	34.8
Mathematics	35.4	35.2	34.6	34.5	34.8
Interest in School	63.5	62.9	64.2	65.6	66.1
Societal Responsibility	50.7	50.5	50.2	50.1	50.2

APPENDIX (Contd.)

STATE Grade Level Subtest	1978	1980	1981	1982	1983
Know. Law/Govt.	24.8	24.9	24.5	24.4	24.7
Health	80.9	81.3	80.6	81.5	81.9
Creativity	43.3	41.1	41.9	41.1	41.7
Career Awareness	22.9	22.9	22.8	22.8	22.9
App. Human Accomp.	131.9	129.1	128.4	128.7	128.0
Know. Human Accomp.	28.2	27.1	26.4	26.0	26.2
Information Usage	17.9	17.9	17.8	17.6	17.9
NEW JERSEY					
Elementary					
Reading	81.9	84.9	88.9	91.6	-
Mathematics	72.5	80.5	83.7	85.9	-
Intermediate					
Reading	82.6	83.8	86.1	88.2	90.1
Mathematics	75.5	78.9	81.1	83.3	83.7
Secondary					
Reading	88.9	87.8	89.6	90.2	-
Mathematics	80.6	81.8	83.4	84.5	-
DELAWARE					
Elementary					
Reading	52	57	58	59	60
Mathematics	51	57	60	62	63
Spelling	51	58	59	N.A.	62
Language	53	60	62	63	64
Intermediate					
Reading	52	54	57	58	60
Mathematics	50	56	59	60	61
Spelling	48	55	57	N.A.	59
Language	50	55	57	61	62
Secondary					
Reading	52	54	55	55	56
Mathematics	50	54	55	55	56
Spelling	48	51	52	N.A.	55
Language	50	53	54	56	58